



# DIY Macro Photography

Written By: Ethan Perrin



## TOOLS:

- [Several desk lamps \(2 minimum\)](#)  
*[For macro, especially micro, photography, ample amounts of light are essential. One lamp on either side of the subject should eliminate shadows.](#)*



## PARTS:

- [SLR fixed-focal length Lens \(1\)](#)  
*[Older lenses work better; they are simpler and cheaper, often easier to use. The lens doesn't have to be mechanically functional, just without scratches and dust.](#)*
- [Point and Shoot Camera \(1\)](#)  
*[My weapon of choice is the Canon Powershot SX210 IS. with 14x optical zoom, I can get right up close with Lincoln's nose.](#)*
- [Pocket Tripod \(1\)](#)  
*[Adjustable legs are a must, flexible ones are the best.](#)*
- [Lens Holder \(1\)](#)  
*[Really anything will work as long as the lens is at the same level as the camera lens. I used an electronics vise opened very wide.](#)*
- [Third arm tool \(1\)](#)  
*[This is used to hold your subject. for](#)*

larger items, poster putty or tape can be used to hold it. The third arm tool has alligator grippers and makes focusing extremely easy.

- Subject (1)

You'll need something to zoom in on. Coins and money are great because they have so many small details. Try different cloths, electronic components, food, and everyday items. Small insects even, if you can get them to hold still! Plants and leaves might be interesting. Fingerprints? The possibilities are endless!

## SUMMARY

I've always wanted to take pictures through a microscope so I can see what tiny screws and coins look like when magnified, but I don't have the money to purchase that kind of equipment. DIY!

Searching on the Internet revealed I could get some really high magnification without any significant expense if I mounted an SLR prime lens *backwards* onto a telephoto lens. I had both the lenses, but they were for an older Canon film camera, and smaller in diameter than the lens on my Nikon D3100.

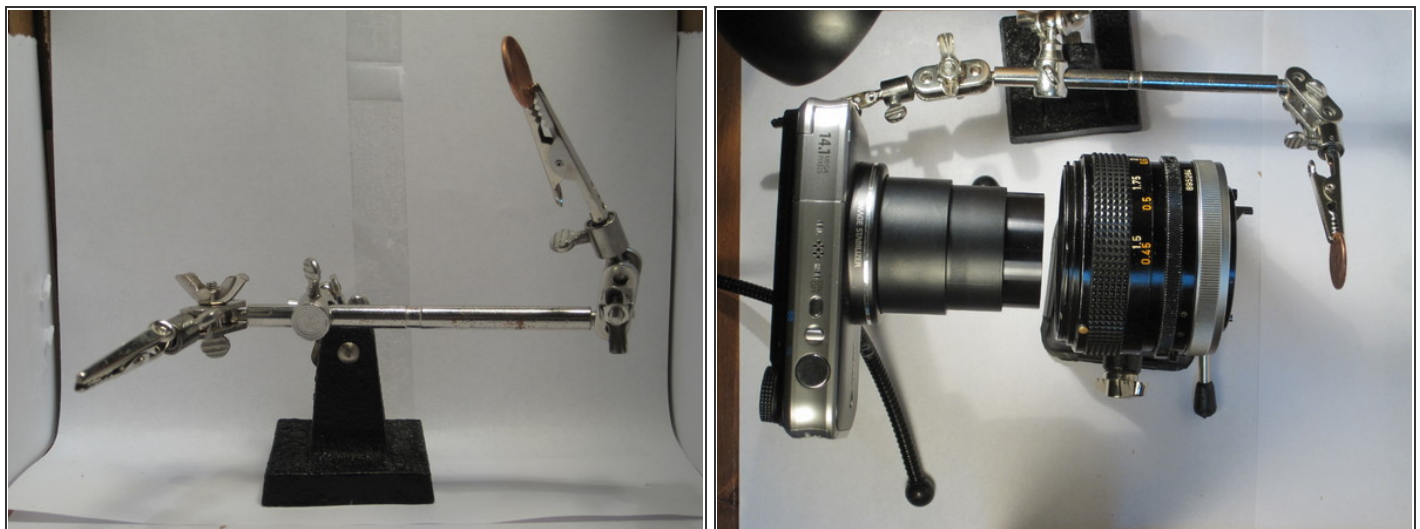
I quickly came to the conclusion of lining one up with my point-and-shoot and using the optical zoom as the telephoto component. The results were astounding!

## Step 1 — DIY Macro Photography



- Your first step is to arrange your camera and SLR lens to line up correctly so you can take pictures through the prime. The prime must be mounted backwards to magnify subjects.

## Step 2



- Clamp your subject in the third arm tool, or any other way that is easily adjusted. Coins work the best to start out with.
- Camera settings are very important. I have had the best results using the highest f-stop on the camera and manual focus. You can get away with autofocus, but it can be frustrating if you plan on taking lots of macros. No flash, and set a two-second timer so that your hand pressing the button doesn't shake the camera. ISO around 200-400; the lower the better. No image stabilization; this can actually blur your pictures.

### Step 3



- Your depth of field is going to be VERY small; less than a millimeter. Focusing is controlled by carefully adjusting the third arm tool back and forth until the subject is in focus. Unless your subject is nearly flat, it will be impossible to focus the whole image. I usually set the focus range on the camera, and adjust the subject until it is focused.

### Step 4



- Adjust your lighting to come from opposite sides, eliminating shadows. Draping a cloth over the prime and camera lens will reduce glare in the gap between lenses.

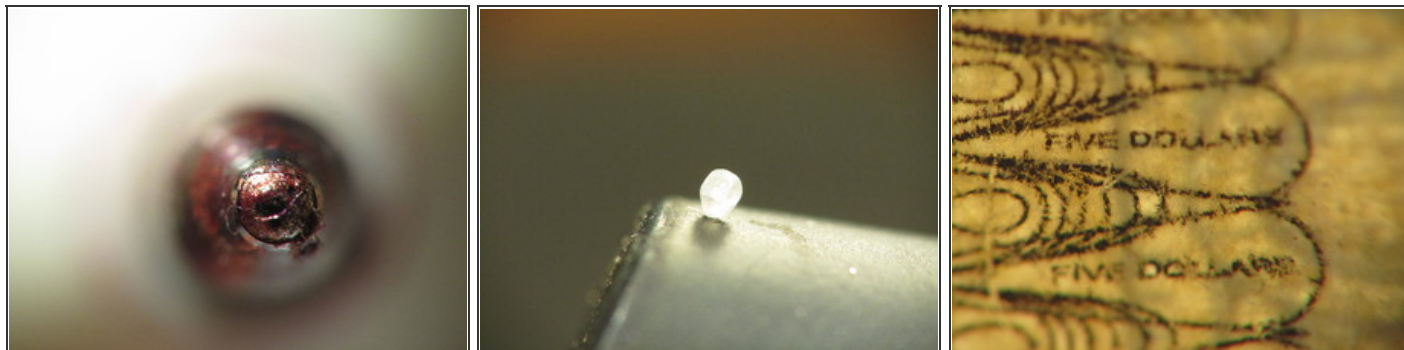


## Step 5



- Snap the picture. It may take several tries to get your subject perfectly in focus. I found it very addictive! Try taking pictures of Lincoln's statue between the center columns of the Lincoln Memorial on the back of a penny.
- In order: The inner workings of an ultraviolet-light-erased EEPROM used before flash memory, a match head, and some white foam.

## Step 6



- If you try this method, please share your results and post a link or photo in the comments.
- In order: The tip of a ball-point pen, a salt grain, and the border of a \$5 bill.

If you want to see more pictures, I've posted some [results](#) online but I encourage you to try this yourself. Prime lenses can be found for as little as 30 or 40 dollars on sites like eBay, and the results are incredible for what you put into this project.

This document was last generated on 2012-11-02 07:31:01 PM.